



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/519,339	08/15/2005	Michinari Miyagawa	KITO5.001APC	9314
20995 7590 08/05/2008 KNOBBE MARTENS OLSON & BEAR LLP 2040 MAIN STREET FOURTEENTH FLOOR IRVINE, CA 92614				
EXAMINER NGUYEN, KHANH TUAN				
ART UNIT		PAPER NUMBER		
1796				
NOTIFICATION DATE		DELIVERY MODE		
08/05/2008		ELECTRONIC		

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

jcartee@kmob.com
eOAPilot@kmob.com

Office Action Summary

Application No.

10/519,339

Applicant(s)

MIYAGAWA ET AL.

Examiner

KHANH T. NGUYEN

Art Unit

1796

Period for Reply -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 05 June 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1, 3, 4, 6-8 and 24-27 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1, 3-4, 6-8 and 24-27 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/S508)
- 4) ☐ Interview Summary (PTO-413)
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____
- Paper No(s)/Mail Date _____

DETAILED ACTION

Final

Response to Amendment

1. The amendment filed on 06/05/2008 is entered and acknowledged by the Examiner. Claims 1, 3-4, 6-8 and newly added claims 24-27 are currently pending in the instant application. Claims 2, 5 and 9-23 have been canceled.

Withdrawn Rejection(s)

2. The rejection of claims 1, 3-4 and 6-8 under 35 U.S.C. 103(a) as being unpatentable over Wani (U.S. Pat. 5,682,288) in view of Maxfield et al. (U.S. Pat. 4,915,985) is withdrawn in light of Applicant's amendment. The rejection of claims 1, 3-4 and 6-8 under 35 U.S.C. 103(a) as being unpatentable over Takenaka et al. (U.S. Pat. 3,830,656) in view of Tsukakoshi et al. (U.S. Pat. 6,294,257) is withdrawn in light of Applicant's amendment.

Claim Objections

3. Claim 24 is objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form. Claim 24, which depends from claim 1, recited the same thermoplastic resin as previously recited in claim 1.
4. Claim 27 is objected to because of the following informalities: The word "hole" (line 2) should be replace with --whole--.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 1, 3, 4, 6-8 and 24-27 are rejected under 35 U.S.C. 103(a) as being unpatentable over English Translation of Ishihara (JP Pub. 2001-168573 hereinafter, "Ishihara").

Ishihara teaches, at drawing 1, a thermally conductive sheet having an insulating silicone rubber substrate 5 comprising of thermally conductive filler 2 blended with silicon gel. The thermally conductive filler 2 may be selected from metal, metal alloy, metal oxide, metal nitride and metallic carbide [0017]. The insulating silicone rubber layer 5 may also contain thermoplastic resin fiber such as polyamide fiber, acrylic fiber and olefin system textile ([0009] and [0020]). Ishihara also teaches a laminated outer most layer 4 (conductive silicon rubber layer) comprising of short-fiber shape pitch based carbon fiber and silicone rubber [0024]. The pitch based carbon fiber may have an average length of 20 micrometers to 1 millimeter. Ishihara teaches the said silicone gel and said silicone rubber may be substituted by fluorocarbon rubber [0014], which is considered a fluoro-elastomers. Ishihara also teaches the outer most layer 4 comprising of 1-60 wt. % of pitch based carbon fiber in silicone rubber matrix [0024]. Since the amount of pitch based carbon fiber (i.e. conductive agent) of Ishihara overlaps with the applicant's ratio of thermoplastic resin to fine carbon fiber ranging from 15:85 to

85:15 (specification page 13, lines 11- 12), one having an ordinary skill in the art would have had a reasonable expectation for formulating an outer most layer having a low volume resistance within the claimed volume resistance ranges (0.1-1.0 ohms-cm) because Ishihara teaches a layer comprising of similar ingredients within the disclosed proportion.

Although Ishihara does not explicitly suggest the conductive silicon rubber layer 4 (outer most layer) having a volume resistance in a thickness direction of $1/5$ or less of the volume resistance of the insulating silicone rubber layer 5 (substrate layer). Nonetheless it would have been obvious to a skilled artisan to recognize the purpose of having an electrical insulating layer as suggested by Ishihara is to provide electrical insulation [0017]. Thus, the insulating silicone rubber layer 5 of Ishihara is expected to be less conductive and more resistive in a thickness direction than the conductive silicon rubber layer 4. Furthermore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to optimize the insulating silicone rubber layer of Dawson to have a volume resistance in a thickness direction of more than $1/5$ the volume resistance of conductive silicone rubber layer by optimizing the amount of insulating filler in the insulating silicone rubber layer. In addition, even though Ishihara does not teach a collector for an electric double layer capacitor use of his composition, the two different intended uses are not distinguishable in terms of the composition. The claiming of a new use, new function or unknown property which is inherently present in the prior art does not necessarily make the claim patentable.

7. Claims 1, 3, 4, 6-8 and 24-27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Takatomi et al. (U.S. Pat. 6,522,523 B2 hereinafter, "Takatomi") in view of English translation of Sakamoto et al. (JP Pub. 2002-124265 hereinafter, "Sakamoto").

Takatomi teaches an electroconductive sheet useful as electrode composite in multi-layer type electric double-layer capacitor (Col. 3, lines 3-15). Takatomi further teaches the electroconductive sheet may be a multi-layer composite sheet of two or more different types (Col. 4, lines 55-58). The each electroconductive sheet comprises of thermoplastic resin such as thermoplastic elastomer, polyolefin elastomer, styrene-butadiene rubber and fluororubber and electroconductive filler such as carbon black, conductive fiber, conductive metal powders, graphite, and long or short fibrous carbon (i.e. carbon fiber) to impart electroconductivity (Col. 3, lines 31-54 and lines 61-67). The long or short fibrous carbon of Takatomi is considered readable on the broad dimension (i.e. diameter and length) of the claimed carbon fiber. Takatomi teaches the amount of electroconductive filler to be incorporated is preferably such that the volume resistivity of the mixture is at most 10^6 ohms-cm (Col. 3, lines 58-60). Takatomi specifically teaches the amount of electroconductive filler (e.g. carbon black or carbon fiber) to be added to the thermoplastic polymer is between 15-150 parts by weight per 100 parts by weight of the thermoplastic polymer (Col. 4, lines 6-9). That is about 13-60 wt. % of electroconductive filler in the total mixture of electroconductive filler and thermoplastic polymer.

Takatomi does not explicitly teach the volume resistance of the electroconductive sheet within the claimed ranges.

In an analogous art of conductive resin sheet useful as cell electrode, Sakamoto teaches conductive resin sheet comprising of conductive thermoplastic resin and conductive particle such as carbon black, graphite, metal, metal carbide, metal oxide and metal nitride [0014] in an amount of 15-60 wt. % to obtain a preferred volume resistivity of 10 or less ohm-cm and 1 more ohm-cm or less [0013]. Sakamoto also teaches a method of adjusting the volume resistivity of the conductive resin sheet wherein an increase in conductive particle will yield a lower volume resistivity [0013].

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to arrive at the claimed conductive resin film by formulating a multi-layer electroconductive sheet having two or more different types of sheet as suggested by Takatomi wherein one sheet (outer most) containing 13-60 wt. % of electroconductive filler such as carbon fiber can have a volume resistance of 1 more ohm-cm or less as suggested by Sakamoto. Additionally, the second electroconductive sheet (substrate layer) of Takatomi may be modified by decreasing the amount of electroconductive filler to yield a higher volume resistance as suggested by Sakamoto. In addition, even though Takatomi in view of Sakamoto does not suggest the thickness of the low-resistance layer (outer most layer) to be 1-50 microns, it would have nonetheless been obvious to one of ordinary skill in the art to reduce the size of the capacitor by reducing the thickness of the low-resistance layer in order to provide the smaller capacitor which is desirable by the market.

Response to Arguments

8. Applicant's arguments with respect to claims 1, 3-4 and 6-8 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

9. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to KHANH T. NGUYEN whose telephone number is (571)272-8082. The examiner can normally be reached on Monday-Friday 8:00-5:00 EST PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Randy Gulakowski can be reached on (571) 272-1302. The fax phone

Art Unit: 1796

number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/KTN/
07/24/2008

/DOUGLAS MC GINTY/

Primary Examiner, Art Unit 1796